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| APPLICATION NO.                  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/626,552                       | 07/25/2003  | Hideki Yamai         | 2003_1036A          | 9323             |
| 513                              | 7590        | 05/03/2006           | EXAMINER            |                  |
| WENDEROTH, LIND & PONACK, L.L.P. |             |                      | LEUNG, JENNIFER A   |                  |
| 2033 K STREET N. W.              |             |                      |                     |                  |
| SUITE 800                        |             |                      | ART UNIT            | PAPER NUMBER     |
| WASHINGTON, DC 20006-1021        |             |                      | 1764                |                  |

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                     |
|------------------------------|-------------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b>        | <b>Applicant(s)</b> |
|                              | 10/626,552                    | YAMAI ET AL.        |
|                              | Examiner<br>Jennifer A. Leung | Art Unit<br>1764    |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-7 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-7 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 25 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 7-25-03;5-20-05;2-26-04.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because of the use of legal phraseology (e.g., rise inhibiting means). Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

2. Claim 3 is objected to because of the following informalities:

In line 2: "blade has" should be changed to --blades have--, since a plurality of blades are set forth in claim 2.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-7, the phrase "agitation type" in the preamble is considered indefinite because the claims include elements not actually disclosed (those encompassed by "type"), thereby rendering the scope of the claims unascertainable.

Regarding claim 3, it is unclear as to the structural limitation applicant is attempting to recite by, "said fixed blade has a descending slope with respect to a swirling direction in swirling and rising". In particular, it is unclear as to which direction the fixed blades slope because the swirling direction has not been defined.

Regarding claim 4, it is unclear as to the structural relationship of the "frames" (line 5) to the other elements of the apparatus.

***Claim Rejections - 35 USC § 102 and 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kojima et al. (JP 09-52038).

Kojima et al. (FIG. 1a, 1b) discloses an apparatus comprising: a dissolving tank 1; an agitating member 4 rotatably disposed in the dissolving tank 1; and rise inhibiting means 5 or 6

disposed in the dissolving tank 1 above the agitating member 4.

Instant claim 1 structurally reads on the apparatus of Kojima et al.

5. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Herbst (DE 199 57 817).

Regarding claim 1, Herbst (FIG. 1A/B, 2A/B) discloses an apparatus comprising: a dissolving tank (i.e., container 1); an agitating member (i.e., the mixing blades, shown but not labeled, attached to agitator shaft 2) rotatably disposed in the dissolving tank 1; and rise inhibiting means (i.e., installations 3) disposed in the dissolving tank 1 above the agitating member (i.e., above the mixing blades).

Regarding claims 2 and 3, the inhibiting means 3 is composed of a plurality of fixed blades (i.e., four blades shown; see FIG. 1B, 2B), each blade 3 having a descending slope (see FIG. 1A, 2A).

Instant claims 1-3 structurally read on the apparatus of Herbst.

6. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by Sase (JP 2000-262878). Sase (FIG. 1) discloses an apparatus comprising: a dissolving tank 2; an agitating member 11,14 rotatably disposed in the dissolving tank 2; and rise inhibiting means (i.e., slurry suppressor 17) disposed in the dissolving tank 2 above the agitating member 11,14.

Instant claim 1 structurally reads on the apparatus of Sase.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Fujikawa et al. (JP 2001-198444). In addition, claims 2-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fujikawa et al. (JP 2001-198444).

Regarding claim 1, Fujikawa et al. (FIG. 1-17; see Abstract; see Machine Translation)

discloses an apparatus (i.e., stirring equipment 1) comprising: a dissolving tank (i.e., reaction container 4); an agitating member (i.e., impeller 2 mounted on stirring shaft 3) rotatably disposed in the dissolving tank 4; and rise inhibiting means (i.e., plate-like part material 5) disposed in the dissolving tank 4 above the agitating member 2.

Regarding claims 2 and 3, the rise inhibiting means 5 may be composed of a plurality of fixed blades (i.e., two or more members 11; see embodiment of FIG. 12 and translation of section [0018]), wherein the blades may be configured with a descending slope (as in the embodiments shown in FIG. 7, 8 or 9).

Regarding claim 4, the rise inhibiting means 5 may comprise a plurality of half-round shaped plates (i.e., see embodiment of FIG. 12, wherein a plurality of half-round shaped plates 11 are shown), wherein each plate 11 has a dimension such that the plates may overlap one another in the respective centers of frames thereof (i.e., "... the tabular smallness member 11 may be formed so that it may *overlap*," see section [0018]), and the rise inhibiting plate has a slope ascending outward (as in the embodiments shown in FIG. 8).

Regarding claim 5, the rise inhibiting means 5 may comprise a reversed-conical shaped vane (see FIG. 6, 7, 8, 9; translation of sections [0015], [0016]) with a distribution hole (i.e., opening 9) formed in the center thereof.

Instant claims 1-5 structurally read on the apparatus of Fujikawa et al.

8. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(a) as being anticipated by Okajima et al. (JP 2002-58913).

Regarding claim 1, Okajima et al. (FIG. 1, 2; Abstract; Machine Translation) discloses an apparatus comprising: a tank 1; an agitating member 4 rotatably disposed in the tank; and

rise inhibiting means 3,11,5 disposed in the dissolving tank above the agitating member 4.

Regarding claim 2, said means 3,11,5 is composed of a plurality of fixed blades 5.

Regarding claim 3, the blades have a descending slope (i.e., plates 5 may be curved; section [0017]).

Regarding claim 6, the apparatus further comprises a top board (i.e., sedimentation promotion member 10) having a number of distribution apertures disposed above the fixed blades 4 (see section [0020]).

Instant claims 1-3 and 6 structurally read on the apparatus of Okajima et al.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ledebrink et al. (US 4,528,130) in view of Fujikawa et al. (JP 2001-198444).

Ledebrink et al. (FIG. 3; column 3, line 11 to column 5, line 17) discloses an apparatus comprising: a dissolving tank (i.e., autoclave 4, or alternatively, tank 3); an agitating member (i.e., stirrer 4a, or alternatively, stirrer 3a) rotatably disposed in the dissolving tank; a powder supply system for supplying powder (i.e., plutonium dioxide from source 2) to the dissolving tank; a nitric acid supply system for supplying nitric acid (i.e., nitric acid from source 1) to the dissolving tank; and a solution discharge system (i.e., via discharge pipe 8a, or alternatively, the pipe exiting the base of tank 3) for discharging a solution from the dissolving tank.

Although Ledebrink et al. does not disclose the specifically claimed supply and discharge locations for the supply and discharge systems (i.e., supply of PuO<sub>2</sub> to the *lower part* of dissolving tank; supply of nitric acid to the *lower part* of dissolving tank; and discharge of solution from the *upper part* of dissolving tank), it would have been obvious for one of ordinary skill in the art at the time the invention was made to select such supply and discharge locations

for the supply and discharge systems in the apparatus of Ledebink et al., on the basis of suitability for the intended use thereof, because the Examiner takes Official Notice that the rearrangement of the location of inlets and outlets of a vessel merely involves routine skill in the art. Furthermore, shifting location of parts was held to have been obvious. *In re Japikse*, 181 F.2d 1019, 1023, 86 USPQ 70, 73 (CCPA 1950).

Ledebrink et al. is silent as to the dissolving tank comprising rise inhibiting means disposed above the agitating member.

Fujikawa et al. (FIG. 1-17; see Abstract; see Machine Translation) teaches an apparatus (i.e., stirring equipment 1) comprising: a dissolving tank (i.e., reaction container 4); an agitating member (i.e., impeller 2 mounted on stirring shaft 3) rotatably disposed in the dissolving tank 4; and rise inhibiting means (i.e., plate-like part material 5) disposed in the dissolving tank 4 above the agitating member 2. It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a rise inhibiting means in the apparatus of Ledebink et al., on the basis of suitability for the intended use, because the means helps restrain bubble generation caused by the stirring, as taught by Fujikawa et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Calderola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer A. Leung

May 1, 2006

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